

critical habitat for wintering piping plovers by June 29, 2001.

ADDRESSES: Questions about this document should be directed to the Chief, Division of Conservation and Classification, U.S. Fish and Wildlife Service, 4401 North Fairfax, Room 420, Arlington, Virginia 22203.

FOR FURTHER INFORMATION CONTACT: Chris Nolin at the above address or telephone (703) 358-2171.

SUPPLEMENTARY INFORMATION:

Background:

The piping plover (*Charadrius melodus*) is a small North American shorebird that breeds in the Great Plains, Great Lakes, and upper Atlantic Coast states; its wintering areas include the lower Atlantic and Gulf coasts of the United States. On December 11, 1985, we published a final rule (50 FR 50720), listing the piping plover as endangered in the Great Lakes watershed (Illinois, Indiana, Michigan, northeastern Minnesota, New York, Ohio, Pennsylvania, Wisconsin, and Ontario) and as threatened elsewhere within its range. All piping plovers on migratory routes outside of the Great Lakes watershed or on their wintering grounds are considered threatened. We did not designate critical habitat for the species at that time.

In December 1996, Defenders of Wildlife (Defenders) filed a lawsuit against the Department of the Interior and the Service for failing to designate critical habitat for the Great Lakes population of the piping plover. Defenders filed a second similar lawsuit for the Northern Great Plains piping plover population in 1997. These lawsuits were subsequently combined (Defenders of Wildlife et al. v. Bruce Babbitt et al., Consolidated Cases Civil No. 1:96-CV-02695AER and Civil No. 1:97-CV00777AER). In February 2000, the court issued an order directing us to publish a proposed critical habitat designation for the Great Lakes population of the piping plover by June 30, 2000. Publication of a similar proposal for nesting areas of the Northern Great Plains population of piping plover by May 31, 2001, was also ordered. A subsequent order directs us to finalize the critical habitat designations for the Great Lakes population by April 30, 2001, including its wintering habitat, and for the Northern Great Plains population by March 15, 2002.

Since we cannot distinguish the Great Lakes and Great Plains birds on their wintering grounds, we felt it was appropriate to propose critical habitat for all wintering piping plovers

collectively. Further, we determined that the appropriate course of action would be to propose critical habitat for all U.S.-wintering piping plovers on the same schedule required, under court order, for the Great Lakes breeding population. We proposed critical habitat for wintering piping plovers on July 6, 2000 (65 FR 41782), and published extensions of the comment period on August 30, 2000 (65 FR 52691), and October 27, 2000 (65 FR 64414), so that the comment period closed on November 24, 2000. We later reopened the comment period from February 22, 2001, through March 1, 2001 (66 FR 11134), to accept additional information. The proposal includes 146 areas along the coasts of North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and Texas. This includes approximately 2,691 kilometers (1,672 miles) of shoreline along the Gulf and Atlantic coasts and along margins of interior bays, inlets, and lagoons.

Section 4(b)(2) of the Endangered Species Act requires that we designate or revise critical habitat based upon the best scientific and commercial data available and after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude an area from critical habitat if we determine that the benefits of excluding the area outweigh the benefits of including the area as critical habitat, provided such exclusion will not result in the extinction of the species. We prepared and made available a draft economic analysis concerning the proposed critical habitat designation (65 FR 52691). We received considerable public comment on our draft analysis of the economic effects of the proposed critical habitat designation; we reopened the comment period the last time (66 FR 11134) primarily to accept additional information into the record on potential economic effects of the designation.

Given the extent and detail of the comments on our draft economic analysis, and especially the significant portion of these comments that arrived after we reopened the comment period in late February, we were only able to develop a draft final economic analysis on April 17, 2001, and a revised draft one week later. We are currently reviewing this revised draft. The final economic analysis is a critically important part of the analysis required under section 4(b)(2) of the Act; without the economic analysis, we are unable to complete an adequate and effective 4(b)(2) analysis.

We, therefore, have delayed by 60 days our final decision on critical habitat for wintering piping plovers. Since the current court order requires this decision to have been made by April 30, 2001, we have requested the court to extend the deadline by 60 days, or until June 29, 2001. We will base our final determination on material and information already in the record for this critical habitat determination and will publish our determination in the **Federal Register**.

Elsewhere in the **Federal Register** today we are publishing a final rule designating critical habitat in the breeding areas of the endangered Great Lakes population of piping plovers. In addition, by May 30, 2001, we will make a proposed determination of critical habitat for the breeding areas of the threatened population of piping plovers in the northern Great Plains.

Author

The primary authors of this document are Wendi Weber and Patrick Leonard, Division of Conservation and Classification, Arlington, Virginia.

Authority

The authority for this action is the Endangered Species Act (16 U.C.S. 1531 *et seq.*).

Dated: April 30, 2001.

Marshall P. Jones, Jr.,

Acting Director, U.S. Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition To List the Washington Population of Western Sage Grouse (*Centrocercus urophasianus phaios*)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 12-month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 12-month finding for a petition to list the Washington population of western sage grouse (*Centrocercus urophasianus phaios*) under the Endangered Species Act of 1973, as amended (Act). We find that the petitioned action is warranted, but precluded by higher priority listing actions. We will develop a proposed

rule to list this population segment pursuant to our Listing Priority Guidance (LPG). We made this finding in accordance with a court-approved settlement in the case of Northwest Ecosystem Alliance v. Babbitt (No. 00–520–EAS(D.D.C)).

DATES: The finding announced in this document was made on April 30, 2001.

ADDRESSES: Submit information, comments, or questions concerning this petition finding to the Supervisor, Upper Columbia Fish and Wildlife Office, U.S. Fish and Wildlife Service, 11103 East Montgomery Drive, Spokane, Washington 99206. The petition, administrative finding, supporting information, and comments received are available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Chris Warren, Fish and Wildlife Biologist, at the above address, by phone at (509) 891–6839, facsimile at (509) 891–6748, or electronic mail at chris_warren@fws.gov.

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), requires that, for any petition that contains substantial information, we conduct a status review and make a finding within 12 months of the date of receipt of the petition on whether the petitioned action is: (a) not warranted, (b) warranted, or (c) warranted but precluded from immediate proposal by other pending proposals of higher priority. Upon making a 12-month finding, we must promptly publish such notice in the *Federal Register*.

On May 28, 1999, we received a petition, dated May 14, 1999, from the Northwest Ecosystem Alliance, Bellingham, Washington, and Biodiversity Legal Foundation, Boulder, Colorado. The petitioners requested that the Washington population of western sage grouse (*Centrocercus urophasianus phaios*) be listed as threatened or endangered under the Act. The petition clearly identified itself as such and contained the names, addresses, and signatures of the petitioning organizations' representatives. Accompanying the petition was information relating to the taxonomy, ecology, threats, and the past and present distribution of western sage grouse.

The petitioners requested listing of the Washington population of western sage grouse based upon threats to the population and its isolation from the

remainder of the taxon, and they provided biological and ecological support for this argument. We considered this request appropriate because, while we do not base listing decisions on political subdivisions other than international boundaries, we must consider for listing under the Act any population of vertebrate taxa (species or subspecies) if it can be recognized as a distinct population segment (DPS) (61 FR 4722). The criteria under which we recognize DPSs are based upon the population's discreteness from the remainder of the taxon and its significance to the taxon to which it belongs. Therefore, our status review considered the population segment of western sage grouse in Washington as it relates to the remainder of the taxon.

In July, 2000, the American Ornithologists' Union (AOU) recognized sage grouse (*Centrocercus urophasianus*) by the common name of greater sage grouse. In addition, the AOU recognized sage grouse inhabiting southwestern Colorado and extreme southeastern Utah as a congeneric species (*C. minimus*), referred to as Gunnison sage grouse (AOU 2000). The western subspecies of greater sage grouse (*C. u. phaios*) was first described in 1946 (Aldrich 1946) and was recognized by the AOU in 1957 (AOU 1957). Compared to the eastern subspecies (*C. u. urophasianus*), western sage grouse have reduced white markings and darker grayish-brown feathering, resulting in a more dusky overall appearance. We adopted the above nomenclature and recognized ranges of these taxa for this finding.

We condensed information regarding the description and natural history of greater sage grouse from the following sources—Aldrich 1963, Dalke *et al.* 1963, Johnsgard 1973, Connelly *et al.* 1988, Fischer *et al.* 1993, Drut 1994, WDFW 1995, Western Sage and Columbian Sharp-tailed Grouse Workshop (WSCSGW) 1996 and 1998, and Schroeder *et al.* 1999.

Grouse are gallinaceous (chicken-like, ground-nesting) birds, and greater sage grouse are the largest North American grouse species. Males and females have dark grayish-brown body plumage with many small gray and white speckles, fleshy yellow combs over the eyes, long pointed tails, and dark-green toes. Males also have blackish chin and throat feathers, specialized erectile feathers at the back of the head and neck, and white feathers around the neck and upper belly. During breeding displays, males also exhibit patches of bare, olive-green skin on their breasts.

Greater sage grouse depend on shrub steppe habitats throughout their life

cycle, and are particularly tied to several species of sagebrush (*Artemisia* spp.). Adult greater sage grouse rely on sagebrush throughout much of the year to provide roosting cover and food, and depend almost exclusively on sagebrush for food during the winter. A wide variety of forbs (broad-leaved herbaceous plants) are also used by greater sage grouse during the spring and summer periods. Greater sage grouse hens require sufficient forb abundance for their pre-laying and nesting periods, and an assortment of forb and insect species form important nutritional components for chicks during the early stages of development. Greater sage grouse may disperse up to 160 kilometers (km) (100 miles (mi)) between seasonal use areas, however, average movements are generally less than 35 km (21 mi).

During the spring breeding season, male greater sage grouse gather together and perform courtship displays on relatively open areas called leks. Leks are often surrounded by more dense shrub steppe cover where males and females may disperse to roost or escape predators during the breeding season. Males defend individual territories within leks and perform elaborate displays with their specialized plumage and vocalizations to attract females for mating. Relatively few, dominant males account for the majority of breeding on a given lek.

Females typically select nest sites under sagebrush cover, although other vegetation is sometimes used. The simple nests consist of scrapes on the ground, which are sometimes lined with feathers and vegetation. Clutch sizes range from 6 to 13 eggs, and females may reneest with loss of their first clutch. Nest success ranges from 10 to 63 percent and is relatively low compared to other prairie grouse species. Chicks begin to fly at 2 to 3 weeks of age and broods remain together for up to 12 weeks. Shrub canopy and the cover provided by grasses and forbs act to conceal nesting hens and their broods.

The annual mortality rate for greater sage grouse is roughly 50 to 55 percent, which is relatively low compared to other prairie grouse species. Most juvenile mortality occurs during nesting and the chicks' flightless stage and is due primarily to predation or severe weather conditions. Up to 50 percent of all greater sage grouse mortality is caused by predation, from both avian (e.g., hawks, eagles, and ravens) and ground (e.g., coyotes, badgers, and ground squirrels) predators.

Historically, greater sage grouse occurred in 12 States and 3 Canadian provinces (after Schroeder *et al.* 1999);

their range extended from southeastern Alberta and southwestern Saskatchewan, Canada, south to northwestern Colorado, west to eastern California, Oregon, and Washington, and north to southern British Columbia, Canada. Range-wide, the distribution of greater sage grouse has declined in a number of areas. Currently, greater sage grouse occur in 11 States and 2 Canadian provinces; they were extirpated from Nebraska and British

Columbia (after Braun 1998). There have also been considerable declines in the abundance of greater sage grouse from historic levels (Hornaday 1916, Crawford and Lutz 1985, Drut 1994, WDFW 1995, Coggins and Crawford 1996, Braun 1998, Schroeder *et al.* 1999, among others).

The historic distribution of western sage grouse extended from south-central British Columbia southward throughout eastern Washington and Oregon, except

in extreme southeastern Oregon near the Idaho/Nevada borders (Figure 1). Populations in northern California and western Nevada are thought to represent an intermediate form between the western and eastern subspecies of greater sage grouse (AOU 1957, Aldrich 1963). Currently, western sage grouse occupy central and southern Oregon and two relatively small areas in central Washington.

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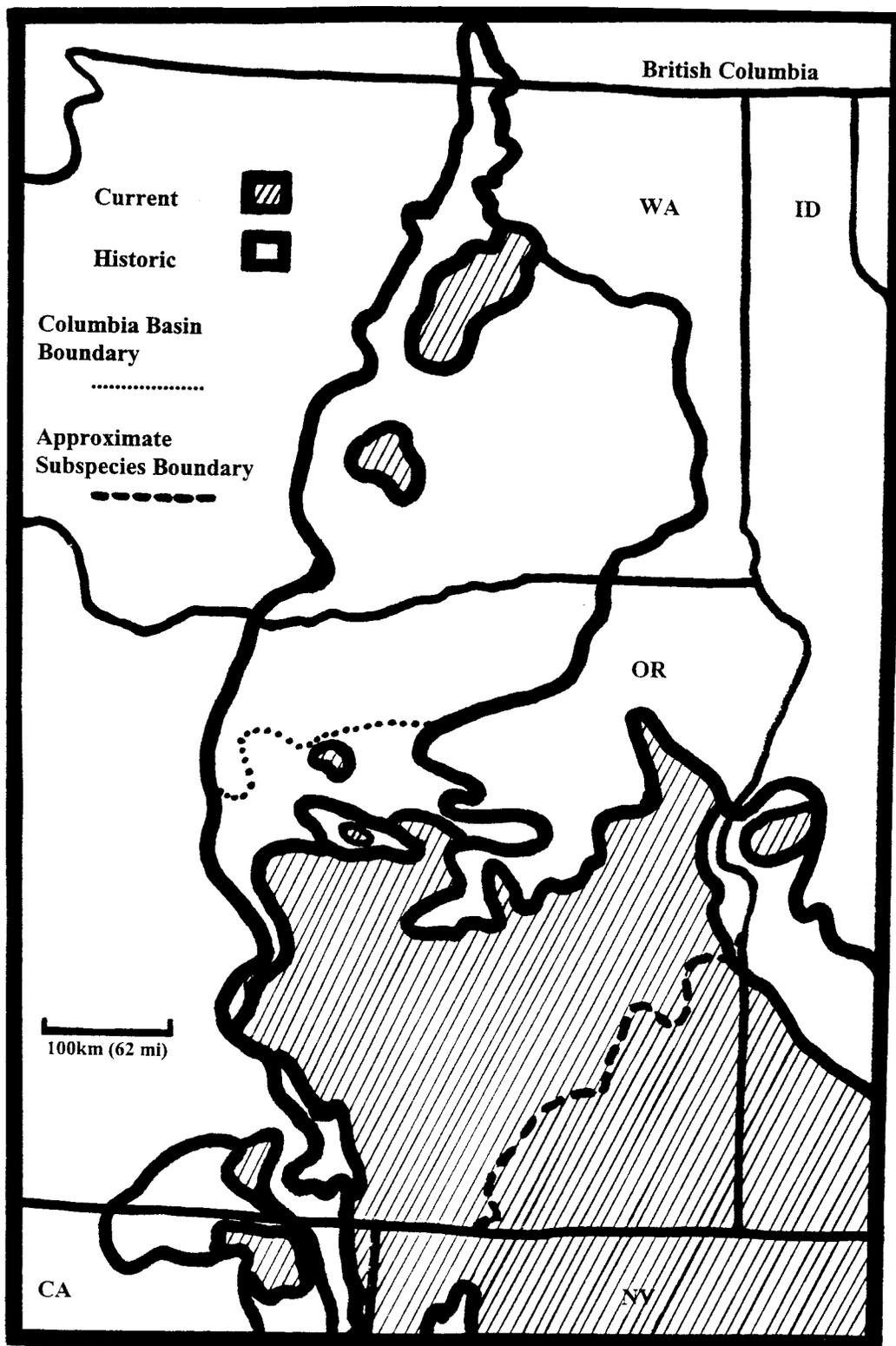


Figure 1. The historic and current distribution of western sage grouse (after Aldrich 1963 and WDFW 2000) and the southern boundary of the Columbia Basin ecosystem (see text).

Except for Wallowa County, western sage grouse were distributed throughout the sagebrush-dominated habitats of eastern Oregon until the early 1900s (Gabrielson and Jewett 1940). By 1920, western sage grouse populations had decreased and the birds were considered scarce except for areas in central and southern Oregon (Gabrielson and Jewett 1940, Drut 1994). Presently, Malheur, Harney, and Lake Counties harbor the bulk of greater sage grouse in Oregon (roughly 24,000 to 58,000 birds, both subspecies combined), with the balance of Oregon's western sage grouse population (roughly 3,000 to 8,000 birds) split among Baker, Crook, Deschutes, Grant, Klamath, Union, and Wheeler Counties (after Willis *et al.* 1993).

Historically, western sage grouse in Washington ranged from Oroville in the north, west along the Cascade foothills, east to the Spokane River, and south to the Oregon border (Yocom 1956). Historic references indicate there were large numbers of western sage grouse in Washington (in Sveum 1995 and WDFW 1995), and annual State harvests averaged roughly 1,800 birds from 1951 to 1973. Harvest rates declined from 1974 ($n = 900$) to 1987 ($n = 18$), and Washington closed the hunting season in 1988 (WDFW 1995). Western sage grouse currently occupy approximately 10 percent of their historic distribution in the State. There are two subpopulations of western sage grouse remaining in Washington, totaling approximately 1,000 birds (WSGWG 1998). The northern subpopulation occurs primarily on private and State-owned lands in Douglas County (roughly 650 birds); the southern subpopulation occurs at the Yakima Training Center (YTC), administered by the U.S. Department of the Army (Army), in Kittitas and Yakima Counties (roughly 350 birds).

Rough estimates, based on the historic distribution of western sage grouse (after WDFW 2000) and contemporary density projections (Johnsgard 1973; Drut *et al.* 1994a; WDFW 1995; Schroeder, WDFW, pers. comm. 1999), indicate that there may have been between 200,000 and 2,000,000 western sage grouse historically. Using best- and worst-case scenarios, western sage grouse abundance has declined between 66 percent and 99 percent from historic levels, respectively.

Previous Federal Action

We added the western sage grouse to our candidate species list on September 18, 1985, as a category 2 species (50 FR 37958). Category 2 species were those for which we possessed information

indicating that a proposal to list as endangered or threatened was possibly appropriate, but for which conclusive data on biological vulnerability and threats were not available to support a proposed rule. On February 28, 1996, we discontinued the designation of category 2 species as candidates for listing under the Act (61 FR 7596).

In 1992, we entered into a voluntary Conservation Agreement with the Army and the WDFW for western sage grouse occurring at the YTC. The Conservation Agreement expired April 30, 2000. Efforts to update and implement a revised Conservation Agreement for western sage grouse throughout Washington are ongoing.

We published a 90-day finding for the subject petition on August 24, 2000 (65 FR 51578), which concluded that substantial information was available to indicate that the petitioned action may be warranted and that a status review would commence. The original public comment period ended October 23, 2000, but was reopened on January 9, 2001 until February 16, 2001, to provide additional opportunity for input from interested parties (66 FR 1632). This 12-month finding is made in accordance with a court-ordered settlement in the case of *Northwest Alliance v. Babbitt* (No. 00-520-EAS(D.D.C.)), which requires us to complete a finding by May 1, 2001.

Distinct Population Segment Review

Under the Act, we must consider for listing any species, subspecies, or, for vertebrates, any DPS of these taxa if there is sufficient information to indicate that such action may be warranted. To implement the measures prescribed by the Act and its Congressional guidance, we (along with the National Marine Fisheries Service) developed policy that addresses the recognition of DPSs for potential listing actions (61 FR 4722). The policy allows for more refined application of the Act that better reflects the biological needs of the taxon being considered and avoids the inclusion of entities that do not require its protective measures.

Under our DPS policy, we use two elements to assess whether a population segment under consideration for listing may be recognized as a DPS. The elements are: (1) The population segment's discreteness from the remainder of the taxon; and (2) the population segment's significance to the taxon to which it belongs. If we determine that a population segment being considered for listing represents a DPS, then the level of threat to the population segment is evaluated based on the five listing factors established by

the Act to determine if listing it as either threatened or endangered is warranted.

Below, we assess the population segment of western sage grouse that remains in Washington under our DPS policy.

Discreteness—A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following two conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation. (2) It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant with regard to conservation of the taxon. We did not address the international boundary criterion in this 12-month petition finding because western sage grouse have been extirpated from British Columbia.

The two subpopulations of western sage grouse that remain in central Washington are separated by approximately 55 km (34 mi). While this distance is well within the species' maximum estimated dispersal distance, a number of recent telemetry studies have never documented their intermixing (Schroeder pers. comm. 1999; Pounds, YTC, pers. comm. 1999). However, until recently, the two subpopulations were considered relatively continuous and may now represent isolated components of a single metapopulation (WDFW 1995, Schroeder *et al.* 2000). In addition, sporadic sightings outside current concentrations indicate there may be some minimal interaction and, possibly, genetic interchange between them (WDFW 1995).

The next closest western sage grouse to the population in Washington are located over 185 km (115 mi) to the south, in central Oregon. Historically, there was a greater level of continuity and interaction between the population segments of western sage grouse in these two regions (Drut 1994). However, bottlenecks in the distribution of western sage grouse may have existed historically across central Oregon (Figure 1). In this area, western sage grouse range is confined to relatively narrow corridors of lower elevation, shrub steppe habitats that transect higher elevation, forested habitats. In addition, the shrub steppe habitats and land forms found in central Oregon may further restrict western sage grouse

distribution within this region (see below).

It is currently unclear to what extent the restrictions of shrub steppe habitats in central Oregon may have acted to isolate population segments of western sage grouse historically. Nevertheless, with regard to western sage grouse seasonal movements, dispersal behavior, and recent census information (Schroeder pers. comm. 1999; Pounds pers. comm. 1999; Ferry, Oregon Department of Fish and Wildlife, pers. comm. 2001), the population segment remaining in Washington is now considered physically discrete from the population segment in central and southern Oregon (WDFW 1995, WSGWG 1998, Schroeder *et al.* 2000). It is likely that the population segments within these two regions have been physically discrete since at least the early-1900s (Gabrielson and Jewett 1940, Crawford and Lutz 1985, Drut 1994).

Based on the above information, we find that the population segment of western sage grouse that occurs in Washington is discrete from the remainder of the taxon.

Significance—Our DPS policy provides several examples of the types of information that may demonstrate the significance of a population segment to the remainder of its taxon, including— (a) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; and (b) evidence that the discrete population segment differs markedly from other population segments in its genetic characteristics; and (c) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon. We address these significance factors below as they relate to the population segment of western sage grouse that remains in Washington.

(a) Persistence in an unusual or unique ecological setting—The broad shrub steppe biome historically occupied by greater sage grouse across their range consists of a number of variable habitat types that grade from

one to the next, and which may be considerably different between the regions occupied by the species (Miller and Eddleman 2000). The different habitats historically and currently occupied by greater sage grouse are a reflection of the different geologic, climatic, and edaphic (soil) conditions and disturbance regimes influencing the various regions within the shrub steppe biome (Miller and Eddleman 2000). Necessarily, greater sage grouse have adapted to the mosaic of shrub steppe habitat types found throughout their historic distribution (Schroeder *et al.* 1999).

With regard to the historic range of western sage grouse, several studies defined and mapped landscape-level ecosystem components of the northwestern United States (Franklin and Dyrness 1988, Quigley *et al.* 1997), while others focused on the management and conservation of natural resources within these regional ecosystems (Wisdom *et al.* 1998, Miller and Eddleman 2000). Although there are a number of differences between these studies and their stated objectives, the ecosystem mapping units that result are surprisingly consistent (Quigley *et al.* 1997). Use of this biogeographic information is important in determining if the population segment of western sage grouse that remains in Washington occupies an unusual or unique ecological setting. In addition, it is important for delineating the bounds of any potential DPS in the region, as required by our DPS policy.

Four (and potentially five) of the ecosystems identified by the above studies provide essential habitat requirements for western sage grouse. For the purposes of this finding, we refer to the ecosystems historically occupied by western sage grouse as the Columbia Basin, High Lava Plains, Northern Great Basin, Owyhee Uplands, and, potentially, the Modoc Plateau (after Quigley *et al.* 1997). The Columbia Basin occurs in Washington and northern Oregon, while the other four ecosystems occur in central and southern Oregon. These ecosystems are

interspersed to varying degrees with forested habitats of the Southern and Eastern Cascades ecosystems to the west, Okanogan Highlands to the north, and the Bitterroot and Blue Mountains to the east; and steppe (grassland) habitats of the Palouse Prairie to the east.

The population segment of western sage grouse that remains in Washington occurs entirely within the Columbia Basin and is the only representation of the taxon within this ecosystem. The population segment of western sage grouse in central and southern Oregon shows nearly continuous occupation across the High Lava Plains, Northern Great Basin, and Owyhee Uplands. Given the available information, it is unclear if the disjunct subpopulation of greater sage grouse in the vicinity of Gerber Reservoir in extreme south-central Oregon (Modoc Plateau) represents western sage grouse or the northern extent of intermediate populations in northern California. This area is not considered further for the purposes of this finding.

A number of significant differences are found between the Columbia Basin and the balance of historic western sage grouse range in central and southern Oregon (Table 1). In general, the Columbia Basin is lower in elevation, contains deeper soils of varying origin, and has been influenced by different geological processes. These structural differences, combined with regional climatic conditions, significantly influence the broad plant associations found within each ecosystem (Daubenmire 1988, Franklin and Dyrness 1988). Historically, transitional steppe habitats were much more prevalent within the Columbia Basin than within the ecosystems of central and southern Oregon. In contrast, juniper (*Juniperus* spp.) woodlands and salt-desert shrub habitats were much more common in central and southern Oregon. Finally, there are significant differences in the type and distribution of sagebrush taxa among the ecosystems historically occupied by western sage grouse.

Table 1.—Differences in Ecosystem Elements Between Regions Occupied by the Extant Population Segments of Western Sage Grouse (After Winward 1980, Daubenmire 1988, Franklin and Dyrness 1988, McNab and Avers 1994, Dobler *et al.* 1996, Quigley *et al.* 1997, and Miller and Eddleman 2000)

ECOSYSTEM ELEMENTS—GEOLOGIC, EDAPHIC, AND TRANSITIONAL HABITATS

Population segment	Elevations	Soils	Channeled scablands	Internally-drained playas	Steppe	Juniper woodland	Salt-desert shrub
Columbia Basin	<3,000 ft	Deep/Loamy Glacial/ Eolian.	Prominent (north).	Rare/Absent	Abundant (east).	Rare/Absent	Rare/Absent.

ECOSYSTEM ELEMENTS—GEOLOGIC, EDAPHIC, AND TRANSITIONAL HABITATS—Continued

Population segment	Elevations	Soils	Channeled scablands	Internally-drained playas	Steppe	Juniper woodland	Salt-desert shrub
Central/Southern Oregon.	>3,500 ft	Thin/Rocky Volcanic/Alluvial.	Rare/Absent	Prominent (NGB, OU) ¹ .	Rare/Absent	Abundant (HLP) Present (NGB, OU).	Abundant (NGB, OU).

¹ Element primarily applies to the ecosystems noted: HLP—High Lava Plains; NGB—Northern Great Basin; OU—Owyhee Uplands.

ECOSYSTEM ELEMENTS—SAGEBRUSH (*Artemisia*) TAXA¹

Population segment	Basin ssp	Wyoming ssp	Mountain ssp	Low	Three-Tip	Stiff	Early	Silver	Black
Columbia Basin.	Dominant ..	Rare/Absent.	Rare/Absent.	Rare/Absent.	Abundant (north).	Abundant ..	Rare/Absent	Rare/Absent.	Rare/Absent.
Central/Southern Oregon.	Rare/Absent.	Dominant ..	Abundant ..	Abundant ..	Present (OU)	Present	Present (HLP)	Present (NGB, OU).	Present (NGB, OU).

¹ Big Sagebrush (*A. tridentata*) Subspecies (ssp): Basin—*A. tridentata*, Wyoming—*A. wyomingensis*, Mountain—*A. vaseyana*; Low—*A. arbuscula*; Three-tip—*A. tripartita*; Stiff—*A. rigida*; Early—*A. longiloba*; Silver—*A. cana*; Black—*A. nova*.

There are a number of broad habitat associations in common between the Columbia Basin and the ecosystems of central and southern Oregon (Daubenmire 1988, Franklin and Dyrness 1988). However, even within these common habitat associations, notable differences exist. In general, the composition of forb species differs considerably between the Columbia Basin and the ecosystems in central and southern Oregon (Daubenmire 1988 and Franklin and Dyrness 1988). Even when the same forb species may be present, the two regions typically support different subspecies and/or varieties of these taxa (Hitchcock and Cronquist 1973).

The differences noted above between the Columbia Basin and the ecosystems of central and southern Oregon affect the essential habitat requirements of western sage grouse within these different regions, as described below.

Greater sage grouse are sagebrush "obligates" and depend on sagebrush to a great degree to provide essential food and cover requirements, especially during winter (Drut 1994, Barnett and Crawford 1994, WDFW 1995, Schroeder *et al.* 1999). Greater sage grouse display preferential use of different taxa of sagebrush as winter food (Remington and Braun 1985, Welch *et al.* 1991) and, in some areas, low sagebrush may be preferred over big sagebrush (in Schroeder *et al.* 1999). In addition, greater sage grouse display preference for the different subspecies of big sagebrush as food, showing the highest preference for mountain big sagebrush, followed by Wyoming big sagebrush, then basin big sagebrush (Welch *et al.* 1991). The different growth forms of sagebrush taxa (Winward 1980 and

1981, Meyer 1992) also provide different cover conditions for greater sage grouse, and their winter movements are associated with locating appropriate sites (WDFW 1995, Schroeder *et al.* 1999). The sagebrush taxa that are available as winter food and cover for western sage grouse differ between the Columbia Basin and the ecosystems of central and southern Oregon (Table 1).

During the breeding season, adult greater sage grouse undergo a nutritional deficit and lose weight (WDFW 1995, Schroeder *et al.* 1999). During this period and continuing into summer, forbs and insects become increasingly important as food items for greater sage grouse. Western sage grouse hens require sufficient forb abundance for their pre-laying and nesting periods, and an assortment of forb and insect species form important nutritional components for chicks during the early stages of their development (Gregg *et al.* 1993, Barnett and Crawford 1994, Drut *et al.* 1994b, Hanf *et al.* 1994). Preferential use of food resources by greater sage grouse is believed to be associated with the foods' nutritive values, the dietary needs of the birds, and, ultimately, the birds' reproductive fitness and survival (Remington and Braun 1985, Johnson and Boyce 1990, Barnett and Crawford 1994, Drut *et al.* 1994a, Drut *et al.* 1994b, Hanf *et al.* 1994, WDFW 1995, Schroeder *et al.* 1999). Many of the native forb species and varieties that differ between the Columbia Basin and the ecosystems of central and southern Oregon (Hitchcock and Cronquist 1973, Franklin and Dyrness 1988) form important food items for greater sage grouse from spring through summer, including those within

the genera *Agoseris*, *Astragalus*, *Crepis*, *Aster*, *Erigeron*, *Eriogonum*, and *Lomatium* (Sveum 1995, Miller and Eddleman 2000).

From spring through fall, sagebrush canopies provide vertical cover for greater sage grouse, while grasses and forbs provide horizontal cover. This variety of cover is very important for concealing nesting hens and their broods from potential avian and ground predators, as well as providing protection from inclement weather. Western sage grouse in central and southern Oregon use different sagebrush habitat associations (e.g., mountain big sagebrush, low sagebrush) throughout the spring and summer periods (Gregg *et al.* 1993, Barnett and Crawford 1994, Drut *et al.* 1994a, Hanf *et al.* 1994). The sagebrush habitat associations preferentially selected by western sage grouse in central and southern Oregon are not available to the population segment within the Columbia Basin (Table 1).

Juniper woodlands and salt-desert shrub communities are notable primarily for their potential to exclude western sage grouse and the management implications that result. As juniper becomes more abundant and areas become increasingly closed woodlands, use by greater sage grouse is precluded. The exclusion of fire from juniper woodlands allow these communities to expand. Active invasion of sagebrush habitat associations by juniper woodlands has occurred over the last 130 years (Miller and Eddleman 2000). Likewise, salt-desert shrub habitats are not typically used by greater sage grouse. Intense grazing pressure and other local activities that can affect the hydrology of an area (e.g., irrigation,

mining, impoundments) may alter the composition and distribution of salt-desert shrub communities. The historic, present, and predicted future occurrence of juniper woodlands and salt-desert shrub communities differ between the Columbia Basin and the ecosystems of central and southern Oregon (Table 1, Keane *et al.* 1996).

Based on the above information, we conclude that the Columbia Basin represents a unique ecological setting due to its geologic, climatic, edaphic, and plant community components. In addition, the unique elements of the Columbia Basin ecosystem affect the essential habitat requirements of western sage grouse. Necessarily, the population segment of western sage grouse occupying the Columbia Basin must differentially exploit the resources that are available, as compared to the population segment within the ecosystems of central and southern Oregon. The different habitat use patterns of western sage grouse within the Columbia Basin have bearing on their food and cover preferences, distribution, movements, reproductive fitness, and, ultimately, their survival. The unique elements of the Columbia Basin also hold different management implications for western sage grouse within this ecosystem (see below).

(b) Markedly different genetic characteristics—To date, most genetic research on greater sage grouse has concentrated on clarifying issues surrounding the taxonomic separation of Gunnison sage grouse in Colorado. Results of this research show Gunnison sage grouse to have a dissimilar genetic profile and less genetic diversity than greater sage grouse populations in Colorado (Quinn *et al.* 1997, Oyler-McCance *et al.* 1999).

This information supports the new species designation for these birds (AOU 2000). The genetic information concerning Gunnison sage grouse demonstrates that the genus may differentiate significantly within a relatively small geographic region. In addition, this information is important for helping to determine the extent of genetic differentiation between population segments of greater sage grouse, and whether such differentiation may be significant to the remainder of the taxon.

Additional studies to investigate the range-wide genetic profiles of greater sage grouse are ongoing (Quinn *et al.* 1997; Benedict and Quinn 1998; Benedict *et al.* 2001). To date, range-wide investigations include samples from Colorado, Utah, Nevada, California, Oregon, and Washington. Sample sizes are minimal for portions of

the range, and the results are preliminary and have been used primarily to guide further investigation (Oyler-McCance, University of Denver, pers. comm. 1999; Quinn pers. comm. 1999).

The range-wide investigations into the genetic profiles of greater sage grouse have identified a number of rare and unique haplotypes (from mitochondrial DNA). In addition, haplotype frequencies and the level of genetic diversity vary among the local populations sampled (Quinn *et al.* 1997, Benedict and Quinn 1998, Benedict *et al.* 2001). So far, there are several notable results from this range-wide work (Benedict *et al.* 2001). First, the population sampled from the Mono Lake area in California and Nevada stands out for having an unusually high proportion of novel haplotypes, sharing only a single haplotype (represented by just one individual) with the rest of the range. This population represents the extreme southwestern extent of historic greater sage grouse range. Second, there is no apparent genetic distinction between the recognized eastern and western subspecies. Third, the population segment that remains within the Columbia Basin stands out for having very low genetic diversity, with just three haplotypes represented among the two subpopulations. Thirteen individuals sampled from the northern subpopulation ($n = 18$) and all of the individuals sampled from the southern subpopulation ($n = 18$) represent a single, widespread haplotype that is shared with most of the other sampled locales. The remaining five individuals from the northern subpopulation are represented by a novel ($n = 3$) or rare ($n = 2$) haplotype (Benedict *et al.* 2001).

The comparatively low genetic diversity of the population segment of western sage grouse that remains within the Columbia Basin is consistent with a recent and severe bottleneck in its effective population size (i.e., the number of individuals contributing to reproduction), reduced or no gene flow to this population segment from other regions, or both (Benedict *et al.* 2001, Oyler-McCance *et al. in litt.* 2001). The results from the range-wide work on the regional genetic profiles of greater sage grouse are suggestive and demonstrate a marked difference between the population segment of western sage grouse within the Columbia Basin and the population segment in central and southern Oregon. However, these results do not necessarily indicate that genetic differentiation of this population segment is significant to the remainder of the taxon. To what extent the forces of isolation, adaptive change, genetic

drift, and/or inbreeding may have influenced the regional genetic profiles of greater sage grouse, including those that remain within the Columbia Basin, merits further investigation (Benedict *et al.* 2001, Oyler-McCance *et al. in litt.* 2001).

(c) Significant gap in the range of the taxon—Western sage grouse represent the extreme northwestern extent of greater sage grouse range. In addition, the population segment that remains within the Columbia Basin represents an isolated portion of the northernmost extent of the historic distribution of western sage grouse. The Columbia Basin historically encompassed roughly 55 percent of the entire range of western sage grouse (Figure 1). Currently, western sage grouse occupy approximately 5 percent of their historic distribution within this ecosystem.

A number of studies address the characteristics of peripheral and/or isolated populations and their potential influences on, and importance to, the remainder of the taxon. Peripheral and isolated populations may experience increased directional selection due to marginal or varied habitats or species compositions at range peripheries, exhibit adaptations specific to these differing selective pressures, demonstrate genetic consequences of reduced gene flow dependent on varying levels of isolation, and/or have different responses to anthropogenic influences (Levin 1970, MacArthur 1972, Morain 1984, Lacy 1987, Hengeveld 1990, Saunders *et al.* 1991, Hoffmann and Blows 1994, Furlow and Armijo-Prewitt 1995, Garcia-Ramos and Kirkpatrick 1997, among others).

Recent discussions addressed the attributes of isolated and peripheral populations and their potential importance to conservation efforts. Some investigations would emphasize genetic distinctiveness (Lesica and Allendorf 1995, Waples 1998), while others suggest a spectrum of influences may demonstrate the value of discrete populations (Pennock and Dimmick 1997, Ruggiero *et al.* 1999). The purposes of the Act are to conserve species “* * * of esthetic, ecological, educational, historical, recreational, and scientific value. * * *” As addressed above, the DPS policy reflects this broader objective and does not limit the concept of significance strictly to genetic distinctiveness.

The available information regarding the historic distribution and potential isolation of western sage grouse within the Columbia Basin demonstrates that this population segment is likely experiencing increased directional selection due to marginal and varied

habitats at the taxon's range periphery, exhibiting genetic consequences of reduced gene flow from other population segments, and responding (and will continue to respond) to the different anthropogenic influences in the region.

Based on the above information, we conclude that loss of the population segment of western sage grouse that remains within the Columbia Basin would represent a significant gap in the historic range of the taxon (i.e., the loss of a conspicuous peripheral and isolated extension of historic range and representation of the taxon within a unique ecological setting).

Conclusion

To summarize, we find that the discrete population segment of western sage grouse that occurs in Washington is significant to the remainder of the taxon, and thus represents a distinct population segment. The significance of this population segment is primarily due to its persistence in the unique ecological setting of the Columbia Basin. In addition, information concerning the historic and current distribution of western sage grouse indicates that the loss of the Columbia Basin population segment would represent a significant gap in the historic range of the taxon. Finally, the available genetic information on western sage grouse, while inconclusive, further supports the recognition of this population as a DPS. We have determined that extirpation of this population segment may result in the loss of unique characteristics within the taxon, likely precluding further scientific inquiry into potential differentiation of these characteristics.

As required by our DPS policy, we determined that the bounds of this DPS are conterminous with the historic distribution of western sage grouse within the Columbia Basin ecosystem (Figure 1). Consequently, we refer to this population segment as the Columbia Basin DPS for the remainder of this finding.

Consideration of threats to, and conservation measures for, the Columbia Basin DPS are addressed below.

Summary of Factors Affecting the DPS

The Act establishes five categories of threat that, either singly or in combination, indicate a DPS may be threatened or endangered. The five listing factors that must be considered are—(1) present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3)

disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human-caused factors affecting the DPS' continued existence.

(1) *Present or threatened destruction, modification, or curtailment of habitat or range.* A number of influences have been implicated in the decline of greater sage grouse distribution and abundance throughout the species' range (Crawford and Lutz 1985, Blus *et al.* 1989, Braun *et al.* 1994, Drut 1994, WDFW 1995, Fischer *et al.* 1996, Connelly and Braun 1997, Schroeder *et al.* 1999). Of primary concern are impacts to native shrub steppe habitats, which include conversion for agriculture, urban and mineral resources developments, construction of utility and transportation corridors, and habitat degradation through overgrazing, brush control, altered fire frequencies, and exotic species invasions. Other potential influences that may be associated with greater sage grouse population declines include predation, excessive hunting, disease and parasitism, chemical applications for pest control, weather cycles, and recreational activities. As a result of these combined influences, greater sage grouse distribution and abundance have continued to decline over the past decade, and a number of populations may now be at risk of extinction throughout the species' range (in WSCSGW 1996 and 1998). Currently, greater sage grouse populations may be considered secure in five States, including Montana, Wyoming, Idaho, Nevada, and Oregon (Connelly and Braun 1997).

Native Americans began grazing horses in the Columbia Basin in the mid-1700s and, by the mid-1800s, European settlers had established extensive cattle and horse grazing operations throughout the shrub steppe habitats used by western sage grouse (Daubenmire 1988, WDFW 1995, Livingston 1998). By the late 1800s, sheep production became increasingly important and large flocks were grazed along with other previously established livestock herds. Concurrent with significant declines in native shrub steppe habitats (see below), contemporary grazing levels are much reduced from historic levels. However, large livestock operations continue within the shrub steppe habitats of the Columbia Basin to the present. From 1986 to 1993, roughly 500,000 cattle were being supported in nine central Washington counties that historically harbored western sage grouse (WDFW 1995).

There is some evidence that the shrub steppe habitats of the Columbia Basin evolved in the absence of substantial

grazing pressure from large native herbivores since the latest period of glaciation, roughly 12,000 years before present (Mack and Thompson 1982, Daubenmire 1988). Excessive grazing pressure can have significant impacts on the shrub steppe ecosystems found throughout the historic range of greater sage grouse (Fleischner 1994), and these impacts may be exacerbated in the Columbia Basin. In this region, excessive grazing removes current herbaceous growth and residual cover of native grasses and forbs, and can increase the canopy cover and density of sagebrush and invasive species (Daubenmire 1988, WDFW 1995, Livingston 1998). These impacts may be especially critical to western sage grouse populations during the spring nesting and brood rearing periods, and may negatively affect their reproductive potential (Crawford 1997, Connelly and Braun 1997, Schroeder *et al.* 1999).

The latest available estimate (1993) of the number of cattle supported in Douglas County, which also supports the northern subpopulation of the Columbia Basin DPS, is roughly 20,000 (WDFW 1995). It is currently unclear if this level of livestock use in the county may have negative effects on western sage grouse or their habitats. Prior to 1992, livestock grazing pressure was intense throughout the area of Kittitas and Yakima Counties that now comprises the YTC, which supports the southern subpopulation of the Columbia Basin DPS. In 1992, grazing intensity was reduced at the YTC within the western sage grouse protection areas identified by the Army. In 1995, cattle grazing was eliminated throughout the installation (Livingston 1998). Twice annually during spring and fall, flocks of sheep are trailed through the YTC over a period of several weeks (Pounds pers. comm. 1999). It is unknown to what degree current livestock use levels may be impacting western sage grouse or their habitat at the YTC. However, impacts from past livestock grazing are still evident throughout the installation (Livingston 1998).

During the first half of the 1900s, large portions of the shrub steppe habitats on deeper soils within the Columbia Basin were converted for dryland crop production (Daubenmire 1988, Franklin and Dyrness 1988, WDFW 1995). During the mid-1900s, a number of hydroelectric dams were developed on the Columbia and Snake Rivers in Washington and Oregon. The reservoirs formed by these projects impacted native shrub steppe habitats adjacent to the rivers and led to further conversion of large expanses of upland shrub steppe habitats in the Columbia Basin

for irrigated agriculture (WDFW 1995, Franklin and Dyness 1988). It has been estimated that approximately 60 percent of the original shrub steppe habitat in Washington has been converted, primarily for agricultural uses (Dobler 1994). While at much reduced levels, shrub steppe habitats within the Columbia Basin continue to be converted for both dryland and irrigated crop production. In addition, the U.S. Bureau of Reclamation retains options for further development of the Columbia Basin Irrigation Project in central Washington (USDI 1998). Major portions of Washington's shrub steppe ecosystem are considered among the least protected areas in the state (Cassidy 1997).

Large areas of privately owned lands in Douglas County are currently withdrawn from crop production and planted to native and non-native cover under the federal Conservation Reserve Program (CRP), established in 1985 (USDA 1998). Lands under the CRP are very important to the northern subpopulation of the Columbia Basin DPS (Schroeder pers. comm. 1999). These areas, some of which have been set aside since the late 1980s, can provide the essential grass and shrub cover requirements of western sage grouse on lands previously used for agriculture. The juxtaposition of CRP lands with the remaining areas of native shrub steppe habitats and crop lands may further increase the value of these habitat patches for western sage grouse (Schroeder pers. comm. 1999). A number of CRP contracts in Washington have expired since 1995, and more are scheduled to expire from now through 2002. New contracts completed in 1998 for Douglas County have increased the acreage of CRP lands potentially available for use by western sage grouse. However, contracts extend for just 10 years and new standards for CRP lands will be implemented that may require replanting of significant acreage under existing contracts (USDA 1998; Schroeder pers. comm. 1999). Presently, it is unclear what effects these changes have had, or will have, on the northern subpopulation of the Columbia Basin DPS.

In 1991, the Army expanded the YTC along its northern boundary by approximately 24,000 ha (60,000 ac) to form its present configuration and size of approximately 130,000 ha (325,000 ac). One of the primary justifications for expansion of the installation was to reduce impacts to heavily used areas by allowing rotational training exercises and rehabilitation of impacted sites (USDD 1989). In 1994, the Army restationed mechanized and armored

combat forces to Fort Lewis in western Washington (USDD 1994). This action was undertaken to accommodate brigade-level maneuver exercises and may result in an increase in overall training activity and associated impacts at the YTC. Large-scale training exercises at the YTC are scheduled to occur at 18- to 24-month intervals and may involve more than 10,000 troops and 1,000 tracked and wheeled vehicles. Small-scale training exercises are also conducted annually at the YTC by other United States' (e.g., Washington National Guard) and allied military units (USDD 1989, Livingston 1998).

In the fall of 1995, the Army conducted its first large-scale training exercise at the YTC following the restationing action. Analysis of the impacts from this exercise indicated that over 9 percent of the sagebrush plants within the western sage grouse protection areas experienced major structural damage. In addition, modeling exercises indicated that sagebrush cover would decline due to similar training scenarios if conducted on a biannual basis (Cadwell *et al.* 1996). Analyses of the potential impacts to other shrub steppe components that may be important to western sage grouse at the YTC (e.g., grass, forb, and insect quality and abundance), or those associated with the smaller, ongoing training activities, are not currently available. However, it has been suggested that native vegetation on impacted sites with limited soil disturbance will recover following large-scale maneuver exercises (Cadwell *et al.* 1996). In addition, the YTC conducts aggressive revegetation efforts for sagebrush and native grasses within the western sage grouse protection areas (Livingston 1998) and has eliminated season-long grazing on the installation (USDD 1996). Evaluation of the quality or quantity of naturally recovered areas and the efficacy of revegetation efforts is currently not available.

Natural and human-caused fire is a significant threat to western sage grouse throughout the Columbia Basin because, at increased frequencies, it can remove sagebrush from the vegetation assemblage (USDI 1994, WDFW 1995). Sagebrush is easily killed by fire (Daubenmire 1988) and, in the absence of a sufficient seed source, may not readily reinvade sites where it has been removed. Fire may be especially damaging at the YTC where military training activities provide multiple ignition sources, vegetative cover is relatively continuous, and invasive species such as cheatgrass (*Bromus tectorum*) and knapweed (*Centaurea* spp) may provide fine fuels that can

carry a fire. The Army considered fire management and control in its planning efforts for the restationing action (USDD 1996), and the YTC has since developed a detailed fire management plan (USDD 1998). However, the potential for relatively large range fires to occur at the YTC remains. In 1996, over 25,000 ha (60,000 ac) of shrub steppe habitat, much of it currently and potentially used by western sage grouse, was burned as a result of training activities. A fire of this magnitude within the identified western sage grouse protection areas would jeopardize the subspecies' persistence at the installation (Livingston 1998).

(2) *Over-utilization for commercial, recreational, scientific, or educational purposes.* Recent scientific investigations in Washington have resulted in some mortality of western sage grouse. However, the level of mortality incurred is not likely to significantly influence the viability of the Columbia Basin DPS (Schroeder pers. comm. 1999; Pounds pers. comm. 1999).

The northern subpopulation of the Columbia Basin DPS occurs primarily on private lands and is not subject to extensive viewing by the general public or other recreational activities (Schroeder pers. comm. 1999). The YTC closely manages recreation and sage grouse viewing by the general public using the installation, and these activities are not believed to be significant to the well-being of the southern subpopulation of the Columbia Basin DPS (Pounds pers. comm. 1999).

The Columbia Basin DPS has not been subject to hunting since 1987 (WDFW 1995).

(3) *Disease or predation.* Greater sage grouse are subject to a number of mortality factors related to disease and predation (WDFW 1995). However, there are apparently no documented severe episodes of disease or predation that have played a significant role in the population declines and range reduction of western sage grouse. Episodes of disease or altered predation patterns may play an important role in the dynamics of small and isolated populations, and increase the risk of their extirpation (see below).

(4) *Inadequacy of existing regulatory mechanisms.* Revegetation standards under the CRP promote the improvement of habitat conditions for the northern subpopulation of the Columbia Basin DPS, and the CRP restricts livestock grazing on contract lands except under extraordinary circumstances. However, these measures are not specifically promulgated for the protection of

western sage grouse, and there are few other mechanisms that regulate grazing practices or the conversion of native habitats on privately owned lands.

The Service is currently assisting with development of a county-wide Habitat Conservation Plan (HCP) for private lands in central Washington (Foster Creek Conservation District, Douglas County). When completed, the HCP will include measures to protect the northern subpopulation of the Columbia Basin DPS. However, the Act does not provide regulatory protections for unlisted species during development of HCPs (USDI 1996).

Some illegal or accidental shooting of western sage grouse may occur in Washington in association with hunting seasons for other upland game species. However, the state hunting moratorium and hunting regulations implemented by the Army at the YTC appear to be sufficient to control this form of mortality, and it is not likely to significantly influence the viability of the Columbia Basin DPS (Schroeder pers. comm. 1999; Pounds pers. comm. 1999).

The Army implements a number of regulations at the YTC to promote environmental protection of the installation's natural resources. However, various impacts to the habitats important to western sage grouse occur, and are primarily the result of training-related fire and direct damage to vegetation communities from training maneuvers (see above).

(5) *Other natural or human-caused factors affecting the DPS' continued existence.* The fragmented, isolated nature of the Columbia Basin DPS is a concern for conservation of the taxon within the Columbia Basin ecosystem. A preliminary viability analysis conducted by the WSWG (1998) indicates that neither subpopulation is likely viable over the long term (approximately 100 years). In addition to the relatively large-scale impacts on native shrub steppe habitats (above), other naturally occurring impacts and human influences of lesser magnitude may pose threats to the Columbia Basin's isolated subpopulations. Potential risks include direct impacts to individuals from inclement weather conditions, altered predator demographics or behavior, agricultural practices (e.g., cultivation, harvest, etc.), vehicle collisions, pest control measures, scientific investigations, and military training (e.g., smoke obscurant and live-fire exercises, etc.). Impacts may also result from indirect disturbance of the subpopulations caused by agricultural and grazing activities, transportation corridors, recreation, and military

training events (over-flights, troop movements, etc.). Small, isolated populations may also be at greater risk to the effects of inbreeding (Benedict *et al.* 2001, Oyler-McCance *et al. in litt.* 2001). Although it is unlikely that any one of these factors have played a significant role in the population declines and range reductions of western sage grouse, these combined influences may now play an important role in the dynamics of the relatively small and isolated subpopulations that make up the Columbia Basin DPS.

Finding

We reviewed the petition, information available in our files, other published and unpublished information submitted to us during the public comment period following our 90-day petition finding and consulted with recognized prairie grouse experts and other federal, state, and tribal resource agencies within the historic range of western sage grouse. On the basis of the best scientific and commercial information available, we find that listing the Columbia Basin DPS of western sage grouse as threatened is warranted, but precluded by higher priority listing actions.

In making this finding, we recognize that there have been declines in the distribution and abundance of western sage grouse throughout the Columbia Basin, primarily attributed to the loss and degradation of native shrub steppe habitats. These impacts are likely due to a combination of factors including crop production, fire, military training, over-grazing by livestock, rural and suburban development, and dam construction. The Columbia Basin DPS of western sage grouse is also at increased risk from inbreeding depression and random environmental influences due to its small size and level of fragmentation. We also recognize that various state and Federal agencies in Washington and Oregon, and throughout the species' historic distribution, are actively managing the birds to try to improve their overall population status and/or attempting to restore them to currently unoccupied habitats.

Due to a backlog of listing decisions and funding constraints, a proposed rule to list the Columbia Basin DPS of western sage grouse will be developed in accordance with our October 22, 1999, (or subsequent) LPG (64 FR57114). Under the LPG, we prioritize our listing activities based upon the magnitude of threats to a listable entity, followed by the immediacy of the threats, and, finally, by the taxonomy of an entity (i.e., monotypic genus, followed by species, then subspecies / DPS). The two subpopulations of the

Columbia Basin DPS are subject to different threats of varying magnitude. However, we conclude that the overall magnitude of threats to the Columbia Basin DPS of western sage grouse is moderate, and that the overall immediacy of these threats is imminent. Under our listing and recovery priority guidance (48 FR 43098), a DPS for which threats are moderate and imminent is assigned a Listing Priority Number of 9.

We intend that any proposed listing action for the Columbia Basin DPS of western sage grouse will be as accurate and effective as possible. Therefore, we will continue to accept additional information and comments from other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this finding.

References Cited

A complete list of references cited herein is available upon request from the Upper Columbia Fish and Wildlife Office (see ADDRESSES section).

Author

This document was prepared by Chris Warren, Upper Columbia Fish and Wildlife Office (see ADDRESSES section).

Authority

The authority for this action is the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*).

Dated: April 30, 2001.

Marshall P. Jones, Jr.,

Acting Director, Fish and Wildlife Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[Docket No. 010319074-1104-02; I.D. 022201B]

RIN 0648-AP13

Atlantic Highly Migratory Species (HMS) Fisheries; Pelagic Longline Management

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; withdrawal.

SUMMARY: NMFS withdraws its proposal to extend the closure of the Charleston Bump area to pelagic longline fishing